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## ORIGINAL ARTICLES.

### A KERATOME AND A FIXATION FORCEPS FOR CATARACT EXTRACTION.*

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Although the lance shaped knife, the forerunner of what is ordinarily known as the Jaeger keratome, was among the first instruments employed in making the corneal incision for the removal of the lens, being a favorite with Daviel, it has been superseded by the long narrow thin blades, particularly that of Graefe, or the long thin but wide triangular knife of the Beer type, and it now has and holds a superior place only as the best instrument for the performance of the iridectomy. Even for this purpose the narrow Graefe knife is to be preferred where the anterior chamber is very shallow.

As a very much more accurate incision may be made with the knife of the lance shape, the probable reasons for its abandonment are, the narrowness of the usual form, a side stroke being required to finish the incision, the length of the blade, which is very liable to injure the iris or the cornea opposite to the original place of entrance, and frequently, the inability of the operator to follow the point of the instrument because of a disturbance in the curvature of the cornea as the incision is being executed.

That guards have been thought of and employed is evidenced by the heart shaped knife of Weber, the actually guarded rec-

*Read before the St. Louis Ophthalmological Society, March 13, 1911.

tangular blade of Howard, a diagram of which may be found in Wood's recent work, "Ophthalmic Operations", and the fourteen millimeter width of the blade of Claiborne, shown by him to the American Ophthalmological Society in 1908, at which time he also gave a number of excellent reasons why the lance shaped form of knife was superior to the knives which require the making of a counter-puncture. He carefully considered and defended the ease with which a broad knife might be entered if proper care was exercised, as well as the length which the blade must have in order to evade a possible unintentional counter-puncture.

When holocain and cocain have been judiciously made use of for the anæsthesia so as to not toughen the corneal tissue, my own experience in making the corneal incision with a wide angle knife coincides with that of Claiborne. This, too, with a knife having the point an actual rectangle. For my own use the trouble with this form of knife has been to gauge the size of the incision, a matter that is determined with the counter-puncture knife at the first thrust of the blade; with the lance knife it must be determined quickly at the close of the incision, which is often not easy to do, even though the operator may take as his guide the lateral angles. In order to establish a guide that is practically absolute, I have taken the curve of the sclero-corneal margin as the curve for the back edge or heel of the knife. The point is a rectangle, the two lateral angles are full twelve or twelve and one-half millimeters from one another, and the back edge, to the center of which the handle is attached, is an arc with a six and one-fourth millimeter radius. With this width and a rectangular point the blade will not touch the cornea opposite to where it is entered in any normal anterior chamber when the heel of the blade reaches the corneal margin, assuming that the incision is made at the sclero-corneal juncture just a little back of the clear cornea and the position of the blade is maintained in the sclero-corneal plane. This is clearly demonstrated in the accompanying diagram, Fig. 1, which shows the cornea enlarged four diameters and the knives proportionately. In this diagram the outer circle represents the anterior scleral margin of a cornea twelve millimeters in diameter, the inner circle the posterior surface of the cornea in the same plane, the shaded portion the corneal tissue, and L the lance shaped knife. It is also seen from this diagram that the nasal and the temporal extremities of the incision made by this knife, L, end in the sclero-corneal margin, anterior surface, about two millimeters above the horizontal meridian, the lo-

cation usually chosen by conservative operators for entering the counter-puncture knife, which is represented by the dotted outline, G. It is further shown by the position of the two knives that the incision AA of the counter-puncture knife, G, on the posterior surface of the cornea, is less in length than the incision BB of the lance knife, the latter being nearly equivalent to the diameter of the cornea must therefore more readily admit of the passage of the lens.

In the diagram Fig. 2 the size and shape of the knife is shown very exactly, as well as its location in the cornea and sclero-corneal margin when the incision has been executed. The blade

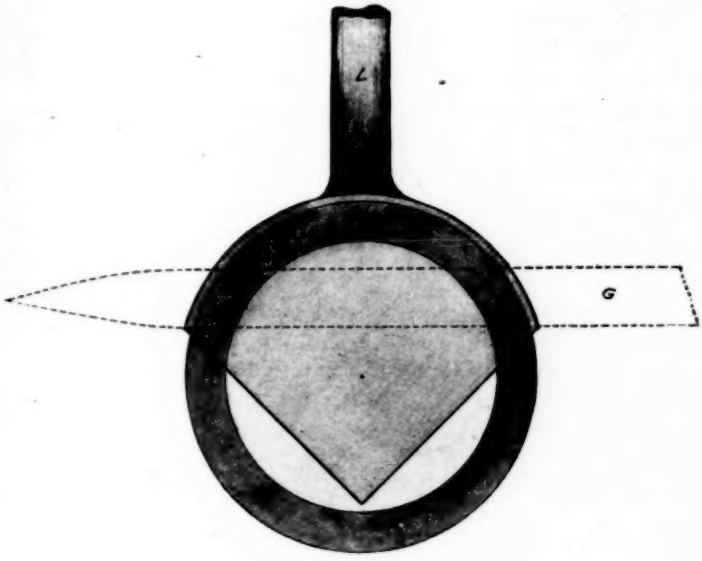


FIG. 1.

FIG. 2.

should be very thin, practically one plane from the attachment of the handle to the point, with a very little gradual thickening through the center from the point to the handle in order that the knife may fill its own wound. The edges and point must be very sharp and for good execution should always be kept so. The angle of the blade to the handle I prefer to have very obtuse, about one hundred and fifty-five degrees.

Other considerations in the use of this knife not mentioned by Claiborne are that the pupil may, I believe had best, be widely dilated, that the handle of the knife may be tilted a little forward as the point arrives near the lower border of the pupil and the

lens may be punctured, so as to more easily admit of the upper portion of the capsule being withdrawn by forceps, and that a small conjunctival flap may be made, if this is desired, either with this knife at the time of its entrance, or with some other form of knife immediately preceding, and time be given for the bleeding to cease previous to beginning the incision with the lance knife.

For the execution of this incision with the greatest precision, firm fixation of the globe is very essential. In order to prevent any possibility of rotation I prefer to use a two-pronged fixation forceps such as is here represented (Fig. 3) which is a new form of an old instrument. The prongs are sufficiently wide, twelve millimeters, to grasp the conjunctiva firmly at either side of the cornea near its corneal attachment two to three millimeters be-

FIG. 3.

low the horizontal meridian, thus giving great steadiness to the globe for this or any other perforating incision. With my first application of this forceps, which was in a difficult iridectomy because of there being a mere trace of an anterior chamber and in which the incision was made with a Graefe knife, I thought it was very clumsy; but the globe was held so perfectly in position by it, as well as in several other similar operations performed since, besides those for cataract, that I would not again be without it. The tension of this instrument should be practically imperceptible so as to obviate any force in holding it, and the teeth should be fine, evenly approximated and not sharp in order to prevent an unnecessary injury to the conjunctiva. An ideal example has been made for me by Müller; also excellent examples of the lance knife have been supplied by both Müller and Tiemann.

# A CASE OF CONGENITAL IMMOTILITY, EXTRINSIC AND INTRINSIC.

By J. B. McCubbin, M.D.,
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Cases of congenital defects of motility involving one or more ocular muscles have been reported by several observers. Of these muscles the external rectus is most frequently involved. But the condition has been especially met with in the levator palpebræ superioris. However, in a review of the literature I have been unable to find a case of congenital ophthalmoplegia totalis, so-called; that is, a complete lack of motility of all the extrinsic and intrinsic muscles of the eye.

Although commonly used the word ophthalmoplegia does not seem appropriate to apply to a congenital affection. Though more cumbersome, a term referring to the motility of the eye such as "Defect of Motility", as suggested by Kunn and accepted by Barck, in referring to troubles purely muscular, is more applicable; and that whether the lesion be considered muscular or central. For even in the latter case the condition is more intelligently understood as one of defective development rather than of paralysis.

Among the cases of congenital lack of motility of the two eyes are those of Lagrange, Parinaud, Guende, Gourfein (Sauvineau, *Encyclopèdie Française D'Ophtalmologie*, Vol. 7). Gourfein reports six such cases in one family.

Schroeder is mentioned by Mauthner (*Nuclearlähmung*) as having observed such a case in which the eyes diverged. The intrinsic muscles were unaffected.

Gast (*Klin. Monblt. f. Augenh.*, June, 1889) relates a case of complete immotility of the eye in a woman aged 33 years. The condition had existed since birth. Each papilla presented an excavation and there existed in the periphery of the retinæ a condition resembling retinitis pigmentosa. Vision 20/30 in each eye. In this case, as in all others, the pupils reacted well to light.

Indeed the absence of associated intrinsic immotility has been made a distinctive feature in the cases of congenital immotility of the extrinsic ocular muscles. In speaking of this Panas (*Traité des Maladies des Yeux*, 1894, p. 59) says: "The lack of development affects various extrinsic muscles of one or both eyes, especially the levator palpebræ, causing ptosis; on the contrary, the

pupillary movement, the accommodation and visual acuity are usually preserved, which indicates that the developmental trouble sets in late, in which case the formation of the globe is perfected.

"One peculiarity lies in the relative preservation of certain muscles, principally the superior oblique, and in the frequency of nystagmus."

Mauthner (*Nuclearlähmung*, p. 360) touches on this important point when he says: "Clinical observations show that that which was to be accepted *a priori*, that is, non-involvement of the iris and accommodation, cannot be characteristic; moreover all forms of involvement for the centers of innervation for the sphincter iridis and the tensor choroideæ actually occur in nuclear paralysis."

The following case came under my observation February 1st, 1911, at the St. Louis Children's Hospital clinic—service of Dr. Charles. Baby W., male, aet. six weeks, well nourished. Bilateral ptosis, normal furrows in the lids being obliterated. The width of the palpebral fissures at the center is reduced to about two mm. On raising the lids the right pupil is found to be moderately dilated, the left more so. There is absolutely no pupillary reaction, direct or consensual, to focal light. The right eye is turned slightly inwards. The left eye occupies the position normal for straightforward vision in the erect posture. This position the eyes maintain except for an occasional jerky movement inwards of the converging eye. There is no proptosis. The globes appear normal. The disks are very pale.

Failing to evoke a responsive movement of the eyes towards an artificial light in a darkened room, I visited the baby ward of the hospital and found that each of the seven babies of about the same age were immediately attracted by the light. In order to determine the amount of limitation of movement, the eyes were cocainised and forceps employed to grasp the ocular conjunctiva, with the result that the right eye could be moved a little inwards, and outwards to the position primary for the normal eye. The amount of traction which the conjunctiva would withstand was not sufficient to move the globe more than two or three mm. in other directions. In the left eye movements of more than two or three mm. in any direction were not obtainable in this manner.

The patient has one sister, 2 years old, and healthy in every way. The mother has had no miscarriages. No history of a similar trouble or other congenital defects in the family. No history of syphilis, or other diseases that might have a bearing on the case.

The neurological examination made by Dr. Bliss revealed no lesions other than ocular.

On February 19th, the baby, now 13 weeks old, was seen again. The ptosis is somewhat less marked; the eyes hold their former position; but there is now a slight movement of the right eye in an effort at fixation(?) The pupils do not react to light. The use of a small drop of eserin causes full miosis. On the first visit a drop of atropine had increased the dilatation. The apparent improvement can probably be attributed to the increasing age of the baby.

In a consideration of the causes of this condition traumatism during birth, in this case, may be eliminated.

It is first necessary to determine whether the lesion may be attributed primarily to the musculature or whether it is to be found in the nervous system. That it is not of muscular origin I believe is attested by two or three facts. The associated intrinsic immotility, and the completeness of the extrinsic involvement speak for a site which is central. The involvement of the optic nerves also favors this view. The same may be said of the associated ptosis.

The extrinsic ocular muscles are undoubtedly supplanted by fibrous cords. This is proved both by the fixation of the globe when examined with forceps and by the lack of proptosis.

A number of these cases have been examined during operation or at autopsy and there has been found an atrophy and even a complete absence of various muscles. In some instances the muscle had assumed an anomalous insertion.

Henck (*Klin. Monblt. f. Augenh.*, 1879, p. 253) found at autopsy an extremely delicate, only 2 mm. wide, levator palpebræ in the right lid, while in the left lid there was no trace of a muscle. The extrinsic ocular muscles had anomalous insertions.

Uhthoff (*Mauthner-Nuclearlähmung*, p. 320) found during operation both internal recti to be represented by thin fibrous bands.

Several other observers, particularly Wrisberg, have found a number of such conditions.

However, one is not warranted in making deductions from such evidence. There seems to be no reason to support the view that such findings prove the defect to be primarily muscular; on the other hand, the conditions found are just such as one would expect to find as the result of a central lesion. And unless the autopsy is made to include the brain the findings are worthless as regards the ætiology.

Gowers, in a case of Hutchinson's (*Nuclearlähmung*, p. 360), where there had existed an extrinsic and intrinsic ophthalmoplegia, found in the nuclei and roots of the cranial nerves changes identical with those found in the anterior horns of the spinal cord in progressive muscular atrophy.

The lesions may be intracranial or intraorbital. In the case just described intraorbital lesions such as tumors may be excluded, because of it being bilateral and the absence of pain or exophthalmus; or, in case of fixation by the cords, increased tension. A lesion at the sphenoidal fissure, in addition to being bilateral, would necessitate an explanation for the lack of involvement of the trifacial.

Of the intraeranial sites, that of cortical or fascicular would hardly afford a plausible explanation in view of the widespread affection, which would require numerous scattered and sharply defined lesions.

An absence of nuclear development, as the primary cause of the condition, is the most logical explanation.

The experiments of Von Gudden, as cited by Howe (*Muscles of the Eye*, 1907, Vol. I), show the intimate relation of the nuclei to the muscles. Von Gudden destroyed one or more muscles in the eyes of young animals, and later, when they had reached maturity, he examined the nuclei, finding a degeneration of the corresponding cells. He was thus able to localize the cells supplying the nerves of the different ocular muscles.

When we recall that in its early development the fourth nerve begins as a part of the ganglion of the fifth, the fact that the latter is unaffected in this case would lend support to the view of late development of these congenital nuclear lesions suggested by Panas.

Levinsohn (*Zeitschr. f. Augenh.*, 1907, October) reports an interesting case and one of considerable bearing on the theory of congenital defective nuclear development This was a girl six years old. A photograph at eleven months showed the condition as at present, which Levinsohn considers congenital. There was moderate ptosis in the right eye and the latter could be moved well outwards only; but slightly inwards. The right pupil irrespective of light and accommodation uninterruptedly dilated and contracted, requiring ten to twenty seconds for the maximum contraction of 2½ mm. and the same time for the maximum dilatation of 9 mm. This, as Levinsohn says, is undoubtedly a phenomenon of central irritation.

The particular point of interest in the case under consideration

is the intrinsic immotility which has not heretofore been observed as occurring in cases of congenital immotility of the extrinsic muscles. This associated involvement of the sphincter iridis argues that many cases of extrinsic immotility considered muscular in origin are to be attributed to a central lesion.

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## THE LACRIMAL DUCT AS A PORTAL OF INFECTION IN BLENNORRHŒA NEONATORUM, AND ITS PREVENTION.

William L. Phillips (*N. Y. Med. Jr.,* July 23, 1910) believes that "the minimum proportion of infected fœtal eyes is caused by direct germ contact, and the maximum amount of infection travels indirectly by way of the nose, a cavity which remains open and would naturally become filled, at the time of the rotary motion of the head through the pelvis, with septic material which is drawn further back by the first breath, filling all nasal openings with infection. The mouth also is forced open by the resistance offered the lower jaw." From the nose the infection may travel to the eye; first, by the bloodvessels and lymphatics; second, by way of the antrum and the frontal sinus; and third, by way of the lacrimal canal. The first and second ways are unusual, the second being only in those cases of severe general infection of the eye. The third way is quite frequent, he thinks. He urges the importance of obstetricians cleansing the nose of the child immediately after its birth in order to prevent blennorrhœa neonatorum. In selecting a drug to be used in the cleansing solution one should be chosen that is non-toxic, that does not coagulate albumin, that is not irritating and is at the same time powerful enough to destroy germs such as the gonococcus, Klebs-Loeffler bacillus and others. He thinks that the most suitable drug for this purpose is disuccinic peroxide (alphozone). A solution of this drug, 1 in 500 up to 1 in 30, may be used either with a medicine dropper or with an atomizer, preferably the latter, as it is safer in the hands of the laity. The head of the child should be tipped forward so that the fluid will flow out of the nose rather than back into the throat, and thus avoid forcing any infection into the Eustachian tubes. If there is a history of a vaginal discharge before birth the nose should be cleansed several times daily, otherwise once daily for three or four days is sufficient. The mouth should also be looked after and the lacrimal ducts gently massaged toward the eye to force out septic material, after which a solution of disuccinic peroxide, 1 in 250, should be freely dropped into the conjunctival sac.

# FINAL FATAL RESULT OF A CASE OF PAPILLŒDEMA WHICH HAD BEEN "SAVED" FROM A PALLIATIVE OPERATION BY THE COLOR FIELDS.

By J. W. Charles, M.D.,
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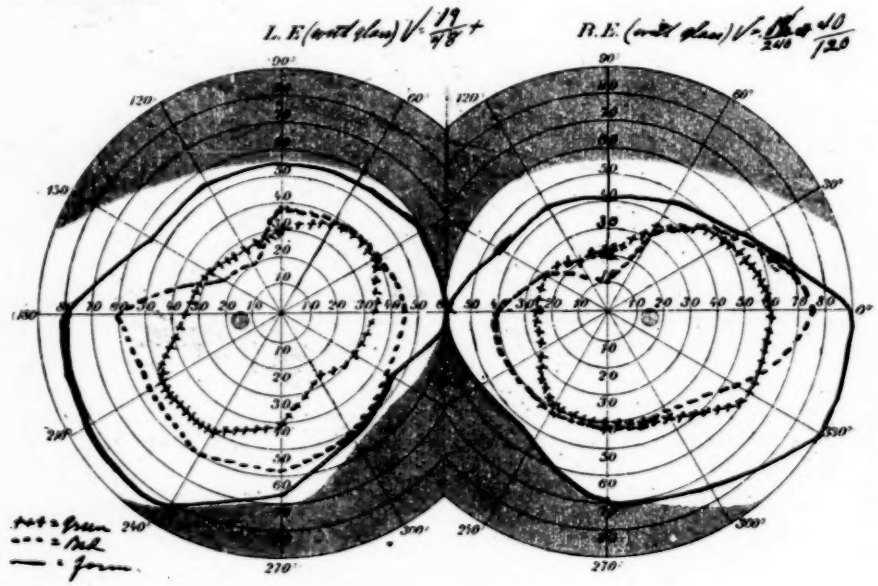
In June, 1909, I reported in this journal the history and fields of a patient with papillœdema right and left, resulting from internal hydrocephalus, upon whom an operation for relief of intracranial pressure was to be avoided on account of the wretched general condition of the patient. In spite of the continued decrease in central vision, at a time when we had about concluded




to operate, the fields for green and red began to improve and a postponement was agreed upon. The last note taken before publication was June 15th, 1909, when test of vision gave O.D. V= 19/38+; O.S. V=19/30+.

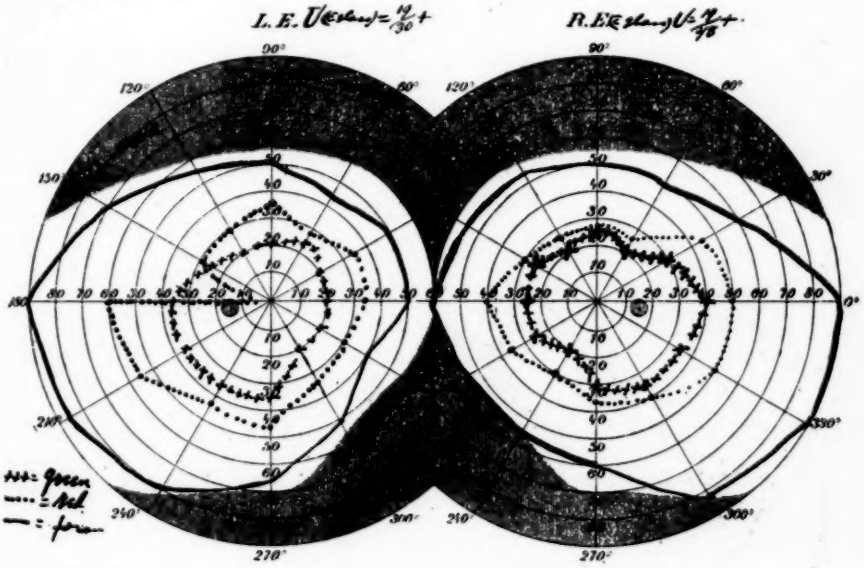
By some chance the visual fields of June 2nd and 10th were omitted, and, as they prove of some interest in view of the after development of the case, they are here added. It will be noticed that the fields for green and red are slightly contracted and that the red field of the left eye has become notched to zero in the horizontal meridian, attributed, at that time to a sudden weariness of the patient.

Very severe headache yesterday.

June 21st.—O.D. V=19/48+; O.S. V 19/30. Ophthalmoscope gives optic disc of O.D. looks more nearly normal.

June 28th.—O.D. V=19/38+; O.S. V=19/30. Discs not quite

Date, June 10th, 1909.



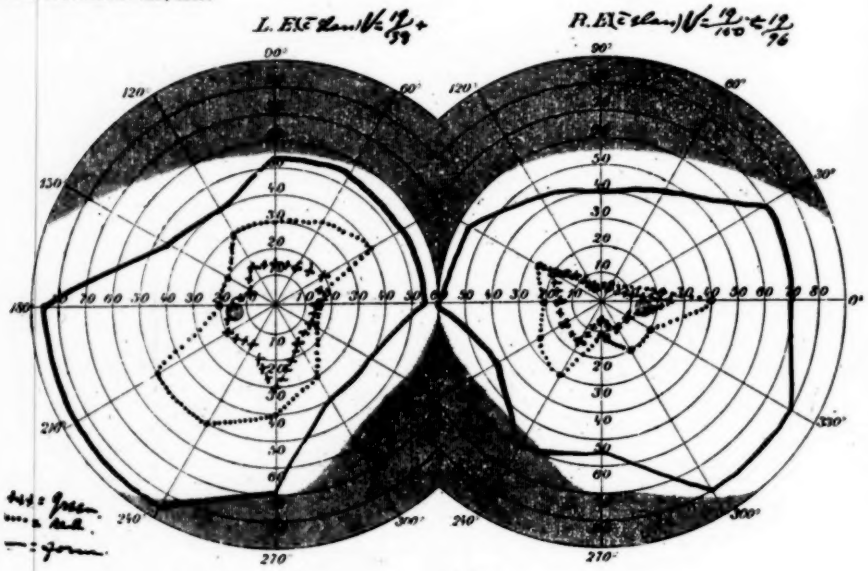
normal, but almost so. The patient has again persuaded his parents to take him home.

He did not return until November 4th, when O.D. V=19/150; O.S. V=19/38+. Ophthalmoscope gives beginning atrophy R. and L. Vid. visual fields, which exhibit a lateral contraction in the left eye contrasted with the more usual vertical narrowing of O.D.

On May 23rd, 1910, the patient returned having been suffering with attacks of unconsciousness and his vision is rapidly decreasing. Pupils react normally. O.D. V=0; O.S. V=fingers at 2 feet. Ophthalmoscope gives atrophy of discs R. and L.

The patient during the summer had several attacks of unconsciousness, and his physician, Dr. G. W. Mayfield, of Bruceville, Indiana, reports his death as follows: "Chronic hydrocephalus, congenital. Contributory asthenic and general paralysis."

Date, November 4th, 1909.



I still believe that the wretched general condition of our patient warranted the avoidance of any operation with its, in this instance, highly probable shock.

# TRANSLATIONS.

## ON RECLINATION OF CATARACTS.*

By G. Levinsohn, M.D.,
BERLIN, GERMANY.

(Translated by Adolf Alt, M.D.)

In all of the civilized countries for about a century cataracts have been removed from the eye either by incision and extraction of the lens in adults, or by discission with or without extraction in young individuals in which the lens is not yet or but little sclerosed. The older operation of depressing the lens into the vitreous body has been totally abandoned and this method is met with only in less civilized countries, as, for instance, in India, where still thousands are operated on in this manner. But, even in highly civilized countries, especially in France, England and America, the question has of late been discussed, whether in appropriate cases the old method, especially reclination, is not preferable to extraction, and this question has almost invariably been answered in such a way that occasionally reclination is thought to be a very appropriate method of cataract operation. The indications vary slightly with different operators but remain within certain limits.

Truc[1] mentions the following indications: (1) Danger of unmanageability of the patient; (2) danger of severe hæmorrhage; (3) dislocation of the lens; (4) purulent inflammation.

Delord[2], a pupil of Truc's, think reclination is in place in cases of (1) dangerous and expulsive hæmorrhage, which had occurred during the operation of the first eye; (2) in chronic purulent conjunctivitis and dacryocystitis; (3) in unmanageable, hysterical, epileptic, delirious and generally paralytic patients; (4) in cases with a chronic cough and prostatic troubles on account of vitreous prolapse, or if during a former simple operation (iridectomy) a prolapse had occurred.

According to Power,[3] reclination is indicated in very old age, imbecility, deafness, chronic conjunctivitis, hæmophilia, subluxation of the lens with liquefaction of the vitreous body.

*Berliner Klin. Wochensch., Feb. 6, 1911.

Luker[4] gives the following indications for reclination: (1) diseases of the mind; (2) epilepsy; (3) hæmophilia; (4) subluxation of the lens with liquefied vitreous body without inflammatory processes in the choroid and retina; (5) incurable blennorrhœa of the lacrimal sac and incurable conjunctivitis; (6) old age and senile debility; (7) incurable bronchitis; (8) after loss of one eye by purulent inflammation when the same is likely to happen in the second eye; (9) shrunken cataract; (10) lenses dislocated backwards with iridodonesis.

Roger,[5] in 1906, addressed a circular letter to the American oculists. Of 76 answering oculists there were only 7 who had done this operation, and of these 7 it was recommended by 6, while one advised against it. 22 thought the operation to be useful, 40 were decidedly against it.

Axenfeld,[6] finally, recommends this operation in cases in which the first eye was lost through an expulsive hæmorrhage, liquefaction of the vitreous body, infection or other complications. From these complications he excludes, however, patients with great psychic restlessness and irritability.

From this comparison of the most important publications on reclination of recent years, it is seen that the opinion concerning the cases in which extraction may be replaced by reclination do not differ materially and agree pretty well. When we consider, however, that according to statistics only 50 per cent. of reclinations are successful, it seems to me that the indications for this operation have been drawn too wide. Thus old age alone, for instance, should never be the cause to abandon extraction in favor of reclination, for we see that even the oldest patients bear, as a rule, the extraction of the lens in an excellent manner, and only, when aside from the old age others of the complications mentioned above give cause to fear an unfortunate course after extraction, it may be permissible to replace it by reclination. Furthermore, imbecility and deafness should rarely or rather not at all be the reason to perform reclination instead of extraction. For it is incomprehensible why in such patients, if they keep quiet, an extraction *lege artis* performed, should endanger the eye. It is similar with epileptics, at least if the extraction is performed during an interval free from attacks. Cases in which an expulsive hæmorrhage had followed the extraction on the first eye and destroyed it, must be treated with the greatest care. In the discussion which followed Axenfeld's paper on this question, Sattler* pointed out that in these cases the hæmorrhage was due to purely local bloodvessel

*Ber. der Heidelberger ophth. Gesellsch., 1907.

alterations and that the extraction on the fellow eye, especially with preliminary iridectomy, had always healed without any complication. The same is the case with a liquified vitreous body when the incision is not made too peripheral and when the capsule is not opened and the lens squeezed out, but is at once after the incision drawn out with the wire loop. This, also, holds good for most of the cases of dislocation of the lens. The treatment of shrunken cataracts need not be discussed, since it is in most cases identical with the treatment of secondary cataracts. In chronic purulent dacryocystitis it will be well to remove the lacrimal sac, and even in most cases of chronic conjunctivitis, after a vigorous treatment of the diseased conjunctiva and a preliminary iridectomy, the extraction may usually be made without much danger. Also, in most cases of chronic bronchitis it will be successful after having diminished the irritability of the bronchial mucous membrane by means of larger doses of morphin. In the mentally diseased, too, especially if they keep quiet, extraction may be performed without danger if they can be kept quiet for a prolonged time by means of narcotics.

Thus the only definite and certain indication for reclination which remains is pronounced hæmophilia. In these very rare cases, in which an uncontrollable hæmorrhage during extraction will always endanger the eye to the highest degree, it will be well to abandon *a priori* any attempt at extraction and to perform reclination. Thus, for instance, when old age is combined with mental disease and great irritability. The old age forbids the use of strong remedies which would be able to keep the patient quiet for a prolonged period, as would be necessary for extraction; therefore, if we want to help such an unfortunate individual the only method to be considered is reclination. In such cases I have twice had the opportunity of performing this operation.

Both were women, inmates of the Insane Asylum at Dalldorf. The extracts from the histories of those patients I owe to Dr. Marcuse. I herewith express my thanks to him, and also to Geheimrath Sander and Sanitaetsrath Kortum, for kindly referring the cases to me for operation.

The first patient was 81 years old and had been suffering for two years from senile dementia. She was perfectly unoriented, walked aimlessly through the house, comprehended questions but rarely, usually repeated them (echolalia), and was usually very restless during night. Cataracta matura in both eyes.

The second patient, 80 years old, had recently, too, become subject to senile dementia. She was suffering from aberrations, thought herself persecuted, talked much and in confused manner, feared to be shot, was extremely restless and could hardly be kept in bed during the night. Both corneæ showed diffuse but superficial opacities, which allowed the iris and pupil to be easily seen. Mature cataract in both eyes.

The operation was made in both cases on the right eye while the patient sat in a chair with face towards a window. Before the operation the eye was cleansed, the pupil moderately dilated with homatropin, and cocainized. In both cases I used the classic Scarpa-Himly method of scleronyxis posterior. With a cataract needle slightly bent on the flat I pierced the sclerotic 4 mm. to the temporal side from the limbus, a little below the horizontal meridian; pushed the needle between iris and lens into the pupillary area until the point had reached the opposite margin of the iris and pressed the lens with slightly levering motions out and downwards, having previously turned the needle around its axis so that the concavity of the shank lay directly on the middle of the anterior lens capsule. However, in both cases the lens rose again as soon as the needle was slightly withdrawn and thus it was necessary to depress it 2 or 3 times in the first case, and oftener in the second one, without however withdrawing the needle altogether from the eye. As, in the second case, it was impossible to free the lens from the tough fibres of the zonula, I finally while depressing the lens with the shank pushed the needle still further and cut the neighboring fibres with the needle as far as possible. After this the depression was successful. In the first patient, who was very restless during the operation, the needle when being pushed forward the third time injured the iris in the region of the sphincter; this, however, in no way influenced the healing. In both cases the eyes operated upon remained free from all irritation. Yet, in the first case the lens capsule with several holes in it remained in the pupillary area; in the second case the lens was depressed within the capsule. In both cases the pupils have lost their round shape. In the second patient it is slightly oval with the longest diameter in the direction from out and up to in and down. The pupil of the first patient in consequence of a broad synechia with the depressed lens is drawn out and downward. At this point, which lies immediately in front of the perforation in the iris made by the needle, the iris is slightly drawn backwards. In both cases when the patient looks down

the gray lens may be seen rising. In the second case the opacity of the cornea prohibits an ophthalmoscopic inspection of the fundus; in the first case it may be easily made through the perforated capsule and the fundus is perfectly normal with a senile conus at the papilla.

Since we had to deal with patients suffering from grave mental diseases the success of the operation was naturally not as apparent as with mentally healthy patients. Testing their visual acuity is impossible as, also, the wearing of spectacles. Still the operation has done them some good as is especially evidenced by the reduced excitability. In the first woman who was less excitable this was less noticeable, except right after the operation. She sees objects, can direct herself, yet shows an apathetic, easily iritated behavior. In the second woman, although the reclination has improved vision but incompletely on account of the corneal opacity (she counts fingers nearby), the excitability had at first totally disappeared. She moves easily about the room and makes the impression of contentment. Of late she has again become more excitable, but not nearly so much as before the operation.

Regarding the technique of the operation, I think the old method of reclination, which I also employed, is most to be recommended. Axenfeld, following Bourgeois, has proposed first to make an iridectomy, then to enter the needle at the limbus opposite the coloboma and to depress the lens in the area of the coloboma from above downward. He praises as advantages of this method: (1) the possibility of watching the depression easily; (2) the lessened injury to the vitreous body; and (3) the possibility of reaching the desired end by a subluxation. To this may be added that the iridectomy may act beneficially in attacks of glaucoma which may eventually appear later on. Although this cannot be gainsaid, Axenfeld's proposition to make an irridectomy before reclination can be beneficial in exceptional cases only, for from what has been stated above the indications for reclination comprise only such cases in which even the performing of an iridectomy is of too great a danger. Thus, for instance, in the two cases just detailed, it would have been impossible to dare to make an iridectomy; with the great restlessness of the patients it would hardly have been possible to save the eyes from prolapse of the vitreous after an iridectomy. If, however, later in such cases of reclination an increase of the intraocular pressure should occur which would not yield to medical treatment, an iridectomy or a similar operation would have to be performed. On the other

hand, the dangers of scleronyxis posterior on account of the greater traumatism to which the eye is subjected and which Axenfeld's method is to avoid, are really but slight. As regards the vitreous body the trauma will probably be the same after a scleronyxis anterior as after a scleronyxis posterior, and as concerns the possible injuries to the iris and lens, which doubtless occur quite frequently with scleronyxis anterior, the course of healing in our first case without any irritation whatever proves of how little importance they are. Axenfeld's proposition, however, to produce only a subluxation of the lens, does not appear without danger. Experience has taught that in subluxation of the lens the eyes are much more easily endangered by a cyclitis or glaucoma, than when the lens has fully sunk down into the vitreous body. It must therefore be our aim to depress the lens altogether and not to remove it only partly from the pupillary area. Viewed from this standpoint, as great a rupture of the zonule of Zinn as can possibly be made, should be of especial value in reclination, as Kuhnt* has previously pointed out. It will be easy to produce such a rupture when the lens rises again, when the operation is made as in our second case; that is, when the zonular fibres are severed with the needle while the shaft depresses the lens. In this manner a special zonulotomy before the reclination, as recommended by Kuhnt, can be omitted.

Finally, a few words as to the prognosis of reclination. Former statistics have shown an extremely high rate of losses after this operation. At least 50 per cent. of the eyes operated upon became totally blind. In recent times this percentage does not seem to have grown much less. Among the important affections by which these eyes were destroyed glaucoma holds first place; it frequently occurred at a very late period and usually destroyed vision altogether. Therefore we may, perhaps, expect in our cases a dangerous increase of tension at a later date. Since the first operation 6 months, since the second only 4 months have elapsed, which is altogether too short a period to give a definite judgment. Yet, nowadays we know how to combat successfully an increase of pressure; therefore, it is not impossible that in recent times the prognosis of reclination may be a better one. To this must be added that the dangers formerly due to sepsis can now be excluded; thus, for instance, cyclitis when produced by an injury to the ciliary body with unclean instruments. Other dangers but comparatively rarely threaten the eye after reclina-

*Zeitschrift f. Augenhlk, 1908.

tion and need therefore not be dwelled upon. It is, then, not improbable that the field for the indications of reclination may in time be further enlarged, while at present this operation seems justifiable only when every other form of cataract operation is out of the question.

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## THE XVIIth INTERNATIONAL CONGRESS OF MEDICINE.

The XVIIth International Congress of Medicine will meet in London in the summer of 1913. The exact date is to be fixed by the International Permanent Committee, which will assemble for the first time in London, 21 and 22 April next, under the presidentship of Dr. F. W. Pavy.

At the same meeting the list of Sections of the Congress will be constituted. Any wishes or proposition concerning the arrangement of this list may be sent, up to the 1st of April, to the Hon. General Secretary of the Permanent Committee, Prof. H. Burger, Vondelstraat 1, Amsterdam, or to the Bureau of the Committee, Hugo de Grootstraat 10, The Hague.

The Committee will be glad to receive, before the same date and at the same addresses, informations and propositions concerning the organization of the Congress.

# MEDICAL SOCIETIES.

## OPHTHALMIC SECTION

### St. Louis Medical Society.

February 1st, 1911.

Section Editor, J. G. Calhoun, M.D.
President, M. H. Post.

Dr. A. E. Ewing reported two cases; the first a complete spontaneous absorption of the lens in a patient 70 year of age.

The second case reported was that of a gun-shot injury to the left globe and orbit, with two shot in the brain. (See February number of this Journal.)

DISCUSSION OF DR. EWING'S FIRST PAPER.

Dr. Adolf Alt said that several such cases had been reported before. He was sorry he had not looked further into the literature, but he had a number of similar cases in his own experience.

In most of the cases there was a history of some injury. He mentioned the case of a young engineer who was struck by a piece of iron in an explosion. There was a hole in the iris and a foreign body was made out in the crystalline lens. The lens became opaque and swollen, and it and the iris looked rusty. The patient came to see Dr. Alt from time to time and was expecting to have the lens removed. Before this was done, however, the patient wrote that he had felt something give way in his eye, and that he could see now. When Dr. Alt saw him again the lens had been absorbed and the patient had fair vision. Dr. Alt had also operated on a man for the extraction of a minute nucleus which lay in the anterior chamber. The eye had probably been injured many years before. There was in this case almost total absorption of the lens.

These cases, however, differ from Dr. Ewing's case in which there was apparently no injury. Dr. Alt had seen the case through the kindness of Dr. Ewing and found the eye just as Dr. Ewing had described it.

Dr. Ewing said in regard to the injury, he had inquired of the patient about this, and she said the eye had never been injured. Dr. Ewing said he believed it was the result of this trouble four years ago, when there probably had been an acute swelling of the lens with rupture of the anterior capsule.

Dr. John Green, Jr., said he had under observation a little boy of four years, who was shot in the eye by a blunt stick, projected from a spring gun. Dr. Green had seen the gun and noted the velocity of the projectile was slight. The tip of the stick, which was one-fourth inch in cross section, struck the eye but did not penetrate the globe. There was a forward dislocation of the lens below. The anterior capsule showed a minute rupture and the lens was swelling and becoming opaque. The clear pupillary space was beginning to show.

Dr. Green suggested that possibly Dr. Ewing's patient had ruptured the capsule by accidentally striking the eye during sleep.

Dr. Alt had, also, under his care at present a boy who had been shot in the eye by a stick with a rubber tip.

The physician to whom the boy had been taken had done the best he could do and had promptly dilated the pupil. The mother brought the boy to the clinic the next day with traumatic cataract, stating that the doctor had ruined her boy's eye, when he had done the correct thing. In this case the nucleus has fallen through a large tear in the lens capsule into the anterior chamber, and a total absorption of the lens was accomplished in 6 weeks.

Dr. J. Ellis Jennings described a case of a man aged 50 who had been struck on the eye by a lump of coal. The capsule was ruptured and the lens slowly absorbed, the pupil being clear in about three months. Dr. Ewing's case, where there was complete absorption of the lens in a patient aged 70, was very rare indeed. Was there not a possibility of a rupture of the suspensory ligament and a disappearance of the lens to the bottom of the vitreous chamber?

Dr. E. H. Higbee, told of a man from Washington, Mo., who worked in a factory where they make corn cob pipes. He was foreman in the factory and was forty-seven years of age. The boys would take the pipe stems and flip them across the room, and this man was accidentally struck by one of these. He was about 16 feet from the boy. The capsule was ruptured and the lens was entirely absorbed. This was different from Dr. Ewing's case, but it shows that absorption of the lens took place in a man of 47.

Dr. Meyer Wiener said that Dr. Wolfner has a case under observation at the present time who is well up in the seventies, and spontaneous absorption of the lens is now going on since they have been observing this man. He came to be operated on for cataract and they had refused to operate on account of his having dacryocystitis. While they had been treating the patient for this condition a black spot occurred in the upper inner portion of the pupil, which is getting larger from time to time, and he is now able to count fingers. This is possibly one of those cases where the nucleus is dropping down without any rupture of the capsule, and the lens is becoming softer and being absorbed.

DISCUSSING DR. EWING'S SECOND PAPER.

Dr. Alt had seen a young man who had tried to commit suicide. He placed the pistol to his temple and the shot had passed through the upper part of the orbit, lodging in the ethmoid cells. The eye itself was not touched by the bullet, but for some reason was taken out by the surgeon. In this case the retina and the choroid were torn in many places and the eye was filled with blood.

Dr. Green asked Dr. Alt if he did not think that cases of injury from gunshot are apt to fare worse when the shot does not penetrate the globe than when it does. In two recent cases of gunshot injury the eyeball was penetrated but in both the globe was saved. The reaction from the trauma was surprisingly slight. In Dr. Ewing's case the shot merely grazed the eyeball and yet the damage done was very great.

Dr. Alt replied that sometimes we see very slight results from severe injuries; again we see very grave results from seemingly small injuries. The fact that the shot passed through the eye and did not destroy the globe might be explained on the ground that it was aseptic. In regard to shots through the orbit, he had seen a number of cases in which the eye did not show any signs of serious injury, except when the optic nerve had been torn and blindness resulted.

In reply to Dr. J. F. Shoemaker's question as to why the development of the sympathetic iritation in this case, Dr. Ewing said he did not know. He told of a case that had been operated on for cataract. The other eye was fairly good. The eye which was operated on did not do well in the care of the oculist who had charge of the case, and the patient finally came to St. Louis. The patient could not bear any light upon the well eye. The

other globe was tender. There seemed to have been no suppuration but considerable iritis and a general going to pieces of the whole globe. After the removal of the diseased eye by Dr. Post the other eye immediately became quiet and could readily bear the light. It was the same way with this boy. He could see normally but could not stand the light. After the removal of the injured eye he could easily stand the light with the other eye, that same afternoon following the operation.

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## OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

January 26, 1911.

Dr. G. A. Berry (Edinburgh), President, in the Chair.

*A Case of Bilateral Superficial Marginal Keratitis in a Woman aet. 73.*—Mr. E. A. Dorrell.

The cornea showed a series of wave-like lines of advancing ulceration.

*A Case of Unusual Appearance of the Iris in Congenital Syphilis.*—Mr. E. A. Dorrell.

A drawing of the early state of the iris showed coarse vascularization and numerous raised masses of grey exudates very like miliary tubercles. von Pirquet's reaction was negative and Wassermann's positive. Treatment by mercurial inunction brought amelioration.

*A Paracentesis Needle for the Preparation of vaccines from the aqueous.*—Mr. E. A. Dorrell.

The needle was a hollow tube ending in a hollow and perforated spear head for penetrating the anterior chamber. The aqueous was allowed to run into a bottle if fluid, or drawn out by a rubber syringe if viscid.

*Section of Pedunculated Tumor of the Conjunctiva.*—Mr. R. R. James.

A boy, aet. 17, presented a growth the size and color of a coffee bean in the upper fornix of one eye. It was removed. Sections showed it to be a pigmented nævus.

*A Case of False Projection after Operation for Squint.*—Mr. Angus Macnab.

A woman, aet. 40, had suffered from convergent squint when aet. 5, for which she had tenotomy of the left internal rectus. Subsequently the eye diverged to about 48°. At this date she was myopic, R.V. —4.5D. 6/6, L. —8D. 6/24. The deformity was reduced by advancement of the left internal rectus and tenotomy of left external rectus. 22° of divergence remained. Symptoms of homonymous diplopia were now obtained which being measured and adjusted to the operative effect indicated a false "macula" in the temporal field. Monocular diplopia was not found.

*A Family of Six with Congenital Dislocation of both Lenses and corectopia.*—Mr. Stroud Hosford.

There were seven in the family, of whom six were affected. Parents and other collaterals were not affected but one was astigmatic. There was no constitutional diathesis.

*The Pituitary Body and Lesions of the Optic Chiasma.*—Mr. J. Herbert Fisher.

Beginning with a summary of cases shown or described at earlier meetings of this society, the author proceeded to discuss recent experimental work, particularly that of Paulesco of Bucharest and of Harvey Cushing and his colleagues of Johns Hopkins University, all of which tended to prove that the essential activity of this minute gland was concentrated in its anterior lobe. The disorders associated with disease of the gland were many and striking—polyuria, glycosuria, impotence or amenorrhœa in adults or infantilism in the younger, excessive adiposity, hebetude, loss of hair, besides the well known features of giantism and optic atrophy more or less complete.

The author then gave a detailed account and critical comparison of nine cases which he had under observation and treatment, and of these showed charts of the visual fields at varying dates and skiagrams of the skull.

Only one of these showed classical giantism; in the others the general symptoms were less, and in some not at all marked; but in each the features of bitemporal hemianopsia were characteristic. It was pointed out that in the earliest stages of the failure of vision the field was curtailed from above downwards; and that in those cases where there was temporary or permanent ameliora-

tion of the symptoms, recovery of the lost field took place from below upwards.

As regards treatment he had found thyrioid extract of service, but in recent cases he had used an extract of the anterior lobe of the pituitary gland, recommended by Cushing and prepared by Armour of Chicago, with apparently great benefit.

In only one case had operation been attempted and then without success.

The President commented on the different features of these cases—in some giantism was the symptom, and in others optic atrophy.

Mr. Lawford described a case in which benefit had been obtained by the use of pituitary extract.

Mr. R. Doyne spoke of the value of taking the fields of vision for color, loss of color range often preceded that for white and gave early warning of changes.

Mr. James Evans confirmed the value of the evidence of the color fields, citing a case in which for several years hemianopsia was the sole symptom of an eventually fatal growth.

Mr. Richardson Cross exhibited the fields of a series of cases under his care and pointed out that the typical bi-temporal hemianopsia was not the invariable result of pituitary pressure.

Mr. Hewkley urged the necessity for experimental work and Mr. Fisher replied.

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## MEETING OF FEBRUARY 9, 1911.

Mr. Gustave Hartridge in the Chair.

*A Case of Central Retinal Detachment in a Young Man.*—Mr. Cruise.

Around the disc and involving the macula was a massive and partly fibrosed detachment, in appearance it was of long standing and agreed with the history of defective sight for several years. v. Pirquet's reaction proved positive on two examinations, Wassermann's negative.

*A Case of Dacryocystorhinostomy.*—Mr. C. Higgens.

His attention had been drawn to this operation and he had operated on the man shown nine days previously, the scar was healed and an old standing mucocle cured. He described the

steps of the operation thus: Turn outwards from the nose a flap carrying the lacrimal sac, excise the inner wall of the sac and clean out the periosteum of the lacrimal fossa, then remove the bone of the fossa; next with a probe inserted through the nose push the nasal mucosa through the hole in the bone and excise the protrusion; replace the skin flap, press into place and suture. The pressure on the operation site from within and without the nose secures adhesion of the outer wall of the lacrimal sac to the nasal mucosa, and a new track for tear drainage is secured.

*A Case of Congenital Irideremia and Deformity of the Lens.*—Mr. H. Grimsdale.

Each lens had a deep kink in its lower border and an anterior polar opacity.

*A Woman aet. 70 with Symmetrical Marginal Corneal Degeneration.*—Mr. E. W. Brewerton.

There was a history of defective vision from infancy "after vaccination." Vision had fallen in recent years. Each cornea had a yellowish irregular band of opacity resembling wash leather nearly completely encircling it, and the thickness was greater than normal. The condition was thought to be one of hyaline degeneration.

*A Case of Widespread Exudation internal to the Choroid and Beneath the Retinal Vessels Giving Rise to a White Reflex.*—Mr. E. Treacher Collins.

The boy, aged 13, had been found with defective vision of the left eye during school inspection. There was a history of meningitis, but none of injury; he was of defective mental control; other members of the family were healthy. R.V. 6/6. L.V. 6/60. In the macular region was a large area giving an intensely white reflex; at one part was a raised pigmented patch, beyond the main area were numerous white spots and irregular patches. The case was thought to be one of "cribriform choroido-retinitis" probably consequent upon an extensive subretinal hæmorrhage.

Mr. M. L. Hepburn argued that the condition indicated rather a venous thrombosis of the macular vortex, probably tubercular and associated with the meningitis.

Mr. G. Coats agreed with Mr. Collins that a hæmorrhage was the more likely explanation.

*Paper on the Pathology of Papillœdema.*—Mr. Leslie Paton and Dr. Gordon Holmes.

It was based on the examination of sixty eyes, fifty of which were from cases of cerebral tumor, the other ten from allied conditions. The predominant and characteristic change found in the optic disc was a simple œdema; in the majority of cases unaccompanied by any signs of inflammation; the œdema did not affect the retina to any serious extent except in the neighborhood of the disc. Signs of œdema however were found in the distal portions of the nerve. This œdema is due to two factors—venous congestion and obstruction of lymph outflow. The venous congestion is due to the rise in intravenous pressure which takes place in the central vein to correspond with the raised sheath pressure which in its turn is due to the raised intracranial pressure. Beyond the lamina cribrosa the central vein with raised intravenous tension comes to a tissue no longer subject to raised sheath tension and the disproportion between intravenous tension and tissue tension leads to increased exudate of lymph. At the same time the drainage of lymph from the disc is interfered with by the increased sheath tension and a consequent accumulation of lymph in the disc tissues takes place. The secondary changes in the tissues, especially those in the nerve fibres, resulting in the formation of varicose nerve fibres and cytoid bodies, were dealt with in some detail. A further section was devoted to the changes seen in consecutive atrophy.

The paper being itself in the nature of an abstract of a longer paper is not easily compressed further. It was illustrated by numerous lantern slides and diagrams.

N. Bishop Harman.

# ABSTRACTS FROM MEDICAL LITERATURE.

By J. F. Shoemaker, M.D.,

St. Louis, Mo.

## SOME OBSERVATIONS ON THE USE OF THE SCHIÖTZ TONOMETER.

W. B. Marple (*Trans. Am. Oph. Soc.*, 1910) describes the Schiötz Tonometer for measuring the intraocular tension and how it is to be used. He finds it easy to make the measurements and says one soon becomes quite expert in the use of the instrument. After one has had a little experience in its use, three observations on each eye can be made in five minutes' time. He finds cocain more satisfactory as a local anæsthetic than holocain and its action in dilating the pupil does not affect the intraocular tension in normal eyes. In glaucomatous eyes it is better to use holocain. Marple found that the normal tension varies between 15 and 25 mm. of mercury. The tension in glaucoma may vary from 35 or 40 mm up to 134, which he found it in one case of absolute glaucoma. He offers the following conclusions:

1. The instrument is thoroughly accurate. I have two tonometers and invariably have the two instruments registered exactly alike.

2. Neither refraction nor age has any influence on the tension.

3. In normal eyes the drugs ordinarily used as mydriatics and miotics have no appreciable effect on tension. Neither does cocain.

4. The normal tension varies between 15 and 25 mm. of mercury; anything above 25 is suspicious; anything below 14 is hypotony.

5. The average normal tension in our cases was 19.5. We have demonstrated repeatedly what an unsafe guide as to tension is the finger, for with the tactuse ruditus a tension is not recognized unless above 35, nor is a minus tension appreciated as such unless as low as 10 or under. Also, an eye with a stiff sclerotic oftentimes gives to the fingers the impression of increased tension when the tonometer shows it to be normal.

6. Its greatest value is in determining low degrees of tension and in excluding plus tensions. He says: I believe the tonometer

has come to stay and that it will not be long before the Schiötz instrument (until a better one is devised) will be as indispensable a part of the skilful oculist's armamentarium as is to-day that other instrument, to the perfection of which, also, Schiötz collaborated so ably with Javal, the ophthalmometer.

## LYMPHOID DEGENERATION OF THE CONJUNCTIVA.

### A NON-SPECIFIC THEORY OF TRACHOMA.

Henry W. Wandless (*N. Y. Med. Jr.*, Jan. 7, 1911) believes: 1, That trachoma is non-specific and non-contagious; 2, that follicular conjunctivitis and trachoma are one and the same disease; 3, that pannus must be regarded as reparative; 4, that trachoma is essentially chronic and self-limited in its nature; 5, that predisposition and susceptibility are important causative factors; 6, that trachoma may be caused by one or more of a number of agencies; 7, that digestive disturbances including autointoxication are potent in the cause of trachoma; 8, that errors of refraction deserve careful consideration as contributing causes of trachoma; 9, that adenoids of the nasopharynx and trachoma are similar processes; 10, that heredity which has been practically excluded from causation, is undoubtedly an important factor.

He says that the adenoid layers of the conjunctiva are the tissues primarily involved, and that closely following this, conjunctival epithelium, the conjunctiva proper, the tarsi and Meibomian glands, and the cornea, in about the order named, become affected. There are three stages of the disease. In the first the lymph follicles appear and, enlarging, push backward the conjunctiva covering them, producing the uneven, "sago grain" appearance. The epithelium covering the follicles becomes thinned by the pressure between the cartilage of the lid and the cornea and eventually the follicles rupture and their contents escape. This constitutes the second stage, and with the rupture of these follicles inflammation of the conjunctiva may rapidly develop, probably due to the irritating action of the contents of the follicles.

Wandless believes that the disease frequently never gets beyond the first stage, the follicles undergoing a condition of atrophy and a cure taking place either as the result of treatment or perhaps spontaneously. He thinks many cases get well thus without any treatment, having had practically no symptoms, there simply being an enlargement of the lymphoid tissue beyond the normal. The first stage may last anywhere from a few weeks

to a few years. With the discharge of the contents of the follicles the third stage, or stage of cicatrization sets in. The three stages are not clearly defined clinically but overlap each other and in some cases all three stages may be in progress at the same time, the predominant feature determining the stage. The Meibomian glands are always involved and generally destroyed in the more severe cases. Pannus follows or may precede inflammation of the cornea. It acts as a protective to the diseased cornea and helps to prevent severe ulceration and to repair damage already done. The causes of trachoma are predisposing and exciting. The author is convinced that the predisposition to trachoma occurs in temperaments akin to lymphatic, strumous, or tuberculous temperaments, if they are not exactly the same. It is impossible for some people to contract trachoma even if the excreta from a typical case of trachoma be rubbed into the conjunctival sac. On the other hand, some cases run a very long and severe course, ending only when the disease has burned itself out, so to speak. Treatment seems to be of little service in such cases and the only explanation is that these patients are particularly susceptible to the disease. Exciting causes may be the different micro-organisms producing conjunctival inflammation, and other local irritants. Toxines resulting from autointoxication and eyestrain due to errors of refraction are of special interest, and Wandless believes they play a very important role among the exciting causes. The similarity between trachoma and adenoids of the nasopharynx is emphasized and the following features common to both diseases are pointed out: 1, Both are histologically the same; 2, both are diseases of childhood; 3, both are self-limited, running a three stage course and ending in atrophy and cicatrization; 4, both are chronic in their nature; 5, both are said to be congenital, sometimes; 6, both are more common among the poor in unhygienic surroundings; 7, both are uncommon in the adult; 8, both are more commonly found in lymphatic temperaments and in underfed children suffering from malnutrition; 9, both are rarely observed before the third or fourth year of life; 10, both are common during the first ten years of life; 11, both are incipient, as a rule, before the fifth year of life, frequently as early as the first year; 12, both are exaggerated by gastrointestinal disturbances; 13, both are exaggerated by functional disturbances of their respective localities; 14, both are predisposed through heredity; 15, both are frequently associated with enlarged tonsils, pre-auricular and submaxillary glands; 16, both are influenced by climatic changes;

17, both have a tendency to keep within restricted limits; 18, both may exist for years and actually recover undiscovered; 19, both lack a tendency to replace any of the tissue removed; 20, both yield the best results if operated upon in the latter part of the first or the first part of the second stage; 21, both will continue to progress if operated on too early, as a rule; 22, both are likely to result in permanent damage if allowed to run their full course or if operated upon too late; 23, children having trachoma usually have adenoids of the nasopharynx. If trachoma be contagious it would appear that adenoids of the pharynx are also.

Treatment should be prophylactic and curative. Concerning prophylactic treatment the author says special efforts should be directed against disease temperaments of all kinds and to various alimentary disturbances, especially autointoxication, the various conjunctival disturbances and errors of refraction. He believes the state of refraction of every child should be determined by the end of the second or third year. As curative treatment, expression is of great value. Medicinal treatment with astringents, of which copper and silver nitrate are most effective, together with the solution of adrenalin 1 in 20,000 to 1 in 40,000 gives most excellent results in the great majority of cases.

## RADIUM THERAPY IN EYE DISEASES.

A. Lawson and J. M. Davidson (*Brit. Med. Jr.,* Nov. 12, 1910) believe that radium will prove of considerable value in the treatment of external diseases of the eye and lids. Their method of applying the radium was satisfactory, although rather crude. The eye was first cocainized and the radium, contained in sealed glass tubes which permitted the passage of only the beta and gamma rays, was applied directly to the affected part. The fingers of the operator were protected by enveloping that part of the tube not required and the fingers in a thick continuous wrapping of lead foil. In no case was there any increase of inflammation or aggravation of symptoms, with the exception of pain, and not the slightest ill-effects was observed from the use of radium. They found that lesions of the cornea could be successfully treated with five-minute applications of the same dose which, for affections of the skin and lids, required an exposure three or four times as long, and also that superficial lesions of the cornea frequently need only quite a small dose, such as 5 or 10 mg., applied once or twice. Concerning the fre-

quency with which the exposures were repeated, they were guided entirely by the progress or otherwise of each individual case. In dealing with hypopyon ulcer or other such dangerous process it was obviously necessary to get results with the least possible delay, and hence the exposure was repeated as soon as considered safe if no improvement had been noted, while in milder cases they waited longer for improvement, seeking the minimum number of sittings necessary to bring about a cure.

The effects of radium continue for some time, six weeks at least, and so some of the cases had only one sitting, a perfect cure resulting. The margin of safety with regard to the minimum interval that should elapse between the sittings depends on the dose employed. The larger the dose the sooner should its effects be produced and the longer the interval between the sittings. For this reason, when a large dose was used at the first sitting it was seldom repeated sooner than after a week's interval unless the disease continued to spread in spite of the treatment, in which case they considered that a second exposure might be given at a shorter interval.

## ORIGIN AND TREATMENT OF DETACHMENT OF THE RETINA.

C. Horstmann (*Deutsche Med. Woch.*, November 24, 1910) says that the retina becomes detached only when the pressure from the vitreous humor is reduced or when a stronger counter-pressure from the outside of the retina pushes it up. He recommends recumbency, moderate diaphoresis, subconjunctival injections of a saline solution, and a light compression bandage as the most satisfactory treatment of detachment of the retina. If decided improvement is not obtained by this treatment in the course of several months, operative treatment may be tried although the prospects for success are not very bright. He states that Uhthoff estimates that the general treatment above advised will cure about 20 per cent. of the cases; Schmidt-Rimpler cured fourteen and decidedly improved twenty-eight out of seventy-six patients, while of Hortsmann's fifty cases, 14 per cent. were cured with good vision by this treatment. Operative treatment should not be considered until medical measures have been given a thorough trial and failed. He advises against measures which cause an injury to the retina or vitreous body.